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PARAMETERS AND BOUNDARY CONDITIONS IN MODELLING THE TRACK DETERIORATION IN A RAILWAY SYSTEM

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ABSTRACT

The main function of the railway track is to support the loads of the railway vehicles and to guide their movements. To investigate the effect of a specific load on the track, the evaluation of the different function of the elements is necessary. Each track component has its own mechanical parameters, which in most case cannot be restored without parts replacements. The development of the track structure has some component properties more important than others. With Finite Element Model (FEM) software packages available, the use of them for simulation and analysis of track components has become an accurate tool when supported by a hybrid approach. In FEM, special attention needs to be given to the boundary conditions and linear or nonlinear interactions between track components. The aim of this paper is to present, in applying to model the track deterioration in a railway system, the mapping of both parameters and boundary conditions, their descriptions, properties, interfaces and how these occur in a railway track in-service.

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